FLEXSMART™ Readers

Installation Guide

1.0 Overview

1.1 Introduction

The FlexSmart Slim readers' use the same reader electronics module. A reader can easily be configured at the site because the readers' bezels can be interchangeably snapped on the common reader module. The following is a quick installation procedure.
The FlexSmart Arch and Wave readers mount on any North American standard electrical gang box or on any flat surface, with snap on bezels. See pages 5 and 6.

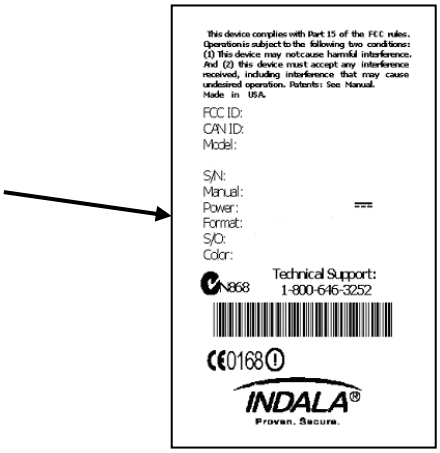
1.2 Unpacking and Identifying Supplied Parts

Unpack the contents and become familiar with the components. The following items will be included with FlexSmart readers:

1. Installation guide.
2. FlexSmart reader module for Slim or Wallswitch and Midrange.
3. Front Bezel.

1.3 Identifying the Reader Format

The reader format is typed on the ID label (see figure) on the reader electronics module.



2.0 Installation

2.1 Mechanical Installation

Refer to pages 6 for reader style.

2.1.1 Mullion Mounting

FlexSmart Wave and Arch, Slim readers mount to a mullion by drilling drill two holes 6-32 or M-3 sheet metal or thread forming screws 3.3" (8.38 cm) apart. Locate and drill a 0.375" (0.95 cm) hole for the reader cable per page 6 for Wave and Arch respectively.

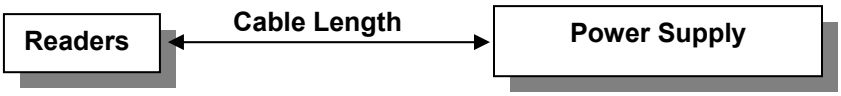
Route the cable through the center hole to the controller. Using the two 6-32 or M-3 screws attach the reader to the first two mounting holes. Once the reader module is screwed in place, snap on the, Arch or Wave bezel.

2.1.3 Removing Front Bezel

Remove Wave bezels using a strong paper clip. Hook the paper clip onto the latch and pull downwards to release it. Remove Arch bezels by pressing a pointed object into the bottom holes of the enclosure to release the latches.

2.2 Power Supply Cable Types and Maximum Lengths

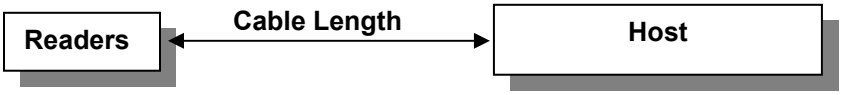
The FlexSmart readers require a minimum voltage of 9.0 VDC. Voltage drops, caused by the cable resistance, can be made up by increasing the power supply voltage *(DO NOT SET THE POWER SUPPLY VOLTAGE TO HIGHER THAN 16 VDC)*. The following are the recommended cable types and maximum cable lengths for cable connecting the power supply to the reader *(DO NOT USE CABLES WITH GAUGES SMALLER THAN 24 AWG):*



Cable Type	Maximum Cable Length
24 AWG (0.60mm), three conductors, with an overall foil shield, 9533 or equivalent.	200’ (61 m)
22 AWG (0.80mm), two conductors, with an overall foil shield, Alpha 5192 or equivalent.	300’ (91 m)
18 AWG (1.20mm), two conductors, with an overall foil shield, 5836 or equivalent.	500’ (152 m)

2.2.1 Reader to Host Interface Wire Types and Lengths

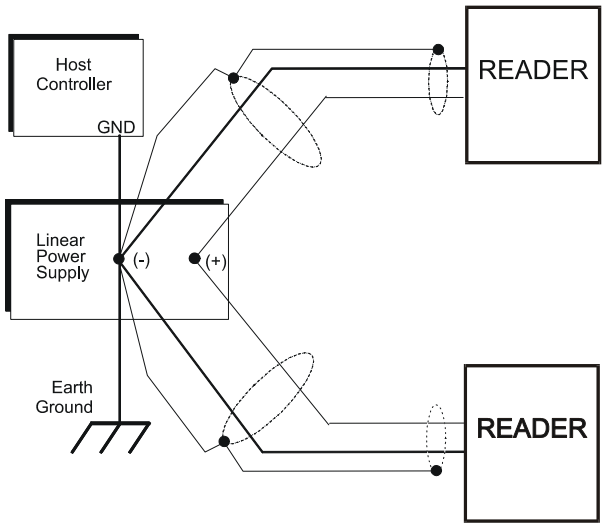
Refer to the table below to determine the recommended wiring type at various maximum distances. Variation in distance requires different wire gauges, Because of system data termination differences, contact your system manufacturer for its exact requirements, Installation to be in accordance with National Electric Code ANSI/NFPA 70.



Cable Type	Maximum Cable Length
22 AWG (0.80mm), six or eight conductor, with an overall foil shield, Alpha 5196, 5198 or equivalent.	500’(152 m)
18 AWG (1.20mm), six or eight conductor, with an overall foil shield, Alpha 5386, 5388 or equivalent.	500’ (152m)

2.3 Electrical Installation

2.3.1. Grounding



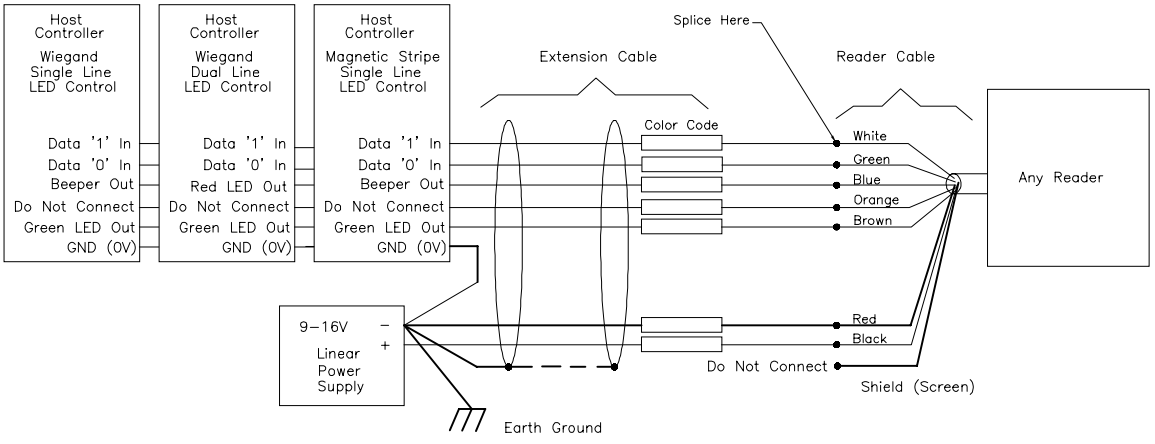
Connect the reader directly to an earth ground. An earth ground can be established by driving a copper clad ground rod into the earth. Make certain the DC resistance between your established earth ground and the system ground is 50 Ohms or less. If direct connection to a ground rod is not possible, connect the reader to an earth grounded cold water metal pipe *(do not connect to copper fire sprinkler system because it may have non-conductive couplings)* or steel frames *(building beams)* that connect to earth.

Prevent ground loops by connecting both the cable shield and the negative line of the power supply to one common earth ground point. Connecting different points to separate earth grounds may result in a ground loop. Ground loops may cause poor read range and communication line interference resulting in no code or improper code being seen by the controller.

In a multiple reader installation, connect all readers to a single earth ground reference point *(common ground).*

2.3.2. Reader to Host Interface Wiring

Choose the appropriate interface for your installation.



Notes:

- The system must have a single earth ground point.
- As shown above, *do not connect shield (screen) wire at FlexSmart reader cable splice.*
- For open collector *(non-terminated output),* consult your system manufacturer for correct cable length and type.

3.0 Operation

When power is first applied to the reader, it performs an internal circuit *Self Test™.* If it appears to be functioning properly, the reader will flash the amber LED and beep twice. After the *Self Test*™ is completed, the reader is in a *READY* status mode and you may present the card to the reader.

3.1 Presenting the Card

To obtain maximum read range, present the card to the reader, keeping the card parallel to the FlexSmart reader, move it slowly toward the face of the reader until a *QuickFlash*™ (refer to section 3.3) is obtained. This is the point at which the card is read and the data is transmitted to the controller. To read the card again, remove it from the antenna field and present it again. During normal use, the card can be presented to the antenna at any angle, although this will result in a reduced read range.

3.2 Data Output

The readers are capable of outputting in either Wiegand or magnetic stripe formatted data. For further information please call technical support at (800) 779-8663

4.0 Regulatory Statements

4.1 FCC

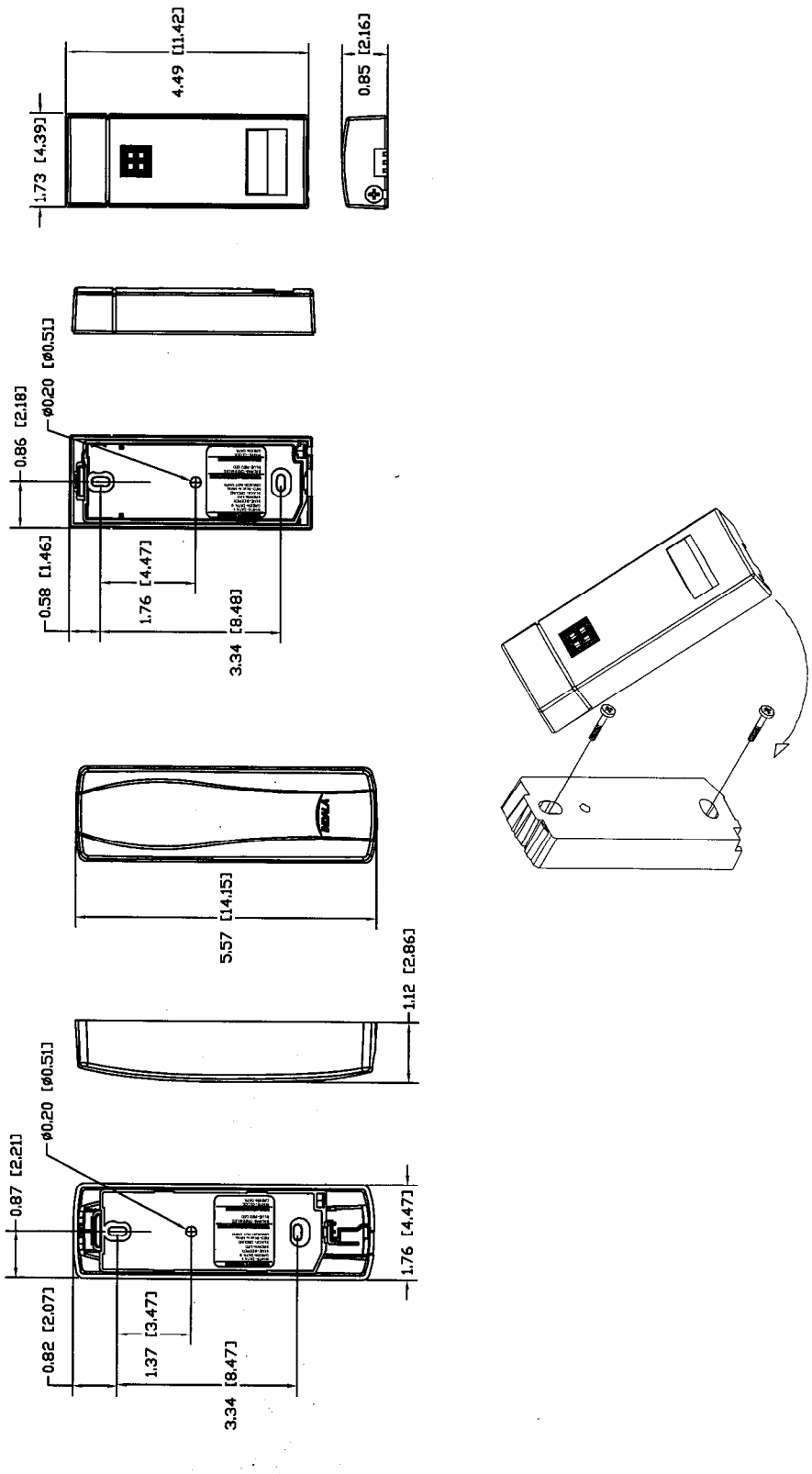
This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. Changes or modifications not expressly approved by the party responsible for compliance could\ void the user's authority to operate the equipment.

FCC Compliance Statement: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

4.2 UL

This Proximity Reader is intended to be powered from a limited power source output of a previously certified power supply.


4.49 [11.42]
1.73 [4.39]
0.85 [2.16]
Ø0.20 [Ø0.51]
0.86 [2.18]
0.58 [1.46]
1.76 [4.47]
3.34 [8.48]
5.57 [14.15]
1.12 [2.86]
Ø0.20 [Ø0.51]
0.87 [2.21]
0.82 [2.07]
1.37 [3.47]
3.34 [8.47]
1.76 [4.47]